(54) Title: SYSTEM AND METHOD FOR VASCULAR VISUALIZATION USING PLANAR REFORMATION OF VASCULAR CENTRAL AXIS SURFACE WITH BICONVEX SLAB
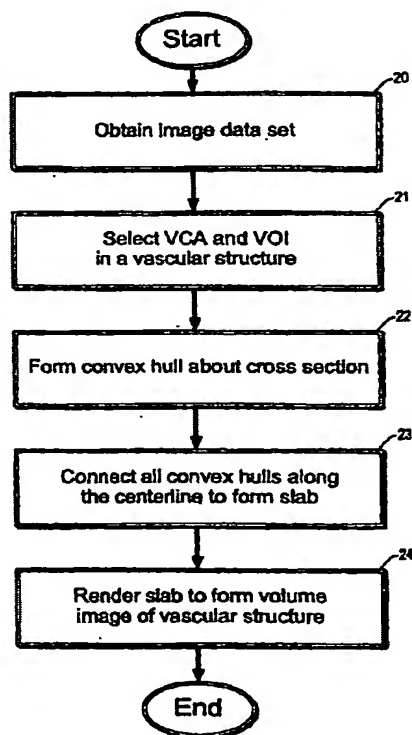
(57) Abstract: A method for visualizing a vascular structure includes obtaining an image dataset (step 20), selecting a vascular central axis (VCA) and a vector of interest (VOI) (step 21), forming a plurality of cross sections perpendicular to the vascular central axis, forming a convex hull to enclose each cross section (step 22), wherein the convex hull is oriented by the vector of interest and determined by the shape of the cross section, and connecting each convex hull to form a biconvex slab (step 23). The biconvex slab comprises two curved surfaces that enclose a 3D volume including the vascular structure of interest. The volume within the biconvex slab can rendered to obtain a 3D view of the entire vascular structure (step 24). Since the biconvex slab is a 3D volume, volume rendering techniques can be used to render the 3D information and generate a resulting image of the vascular structure in a flattened plane having precise 3D spatial information.